M E M O R A N D U M

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SUBJECT: Operational Position Statement for Aug 12 - Aug 18, 2014

The U.S. Army Corps of Engineers (USACE) is responsible for managing Lake Okeechobee water levels and makes operational decisions about whether to retain water or release water based on their regulation schedule release guidance (2008 LORS). The USACE makes this decision taking into account the best available science and data provided by its staff and a variety of partners, which includes the South Florida Water Management District (SFWMD).

The SFWMD team has discussed the system wide environmental conditions, the water supply conditions, and has evaluated the overall status of the water management system. Detailed reports are available at the SFWMD's Operational Planning internet page.

Recommendation to the USACE

For the period August 12, 2014 through Aug 18, 2014, the SFWMD recommendation to the USACE is to follow the 2008 LORS release guidance to manage the Lake Okeechobee stage. The USACE is currently implementing a ten day pulse release averaging 1,500 cfs which started on August 8, 2014. The current level of pulse prescribed by the WCP measures the pulse volumes at S-79 and requires that the Lake Okeechobee releases (at S-77) be reduced to account for any local runoff into the Caloosahatchee River (C-43) between S-77 and S-79. This accounting is performed on a daily basis. With the local runoff resulting in flows comparable to the current pulse volume, the SFWMD is not recommending an increase this week as 1) it would not result in a meaningful increase in the volumes discharged from Lake Okeechobee, and 2) the Caloosahatchee is recovering from a period of moderately high local runoff. The lake stage continues to rise and is currently in the middle third of the Low Sub-band so a larger release may be needed in the future. With the rate of rise slowing, we can afford to wait one more week when it is more likely that reduced local runoff in Caloosahatchee River will make the release more effective at S-77

2008 LORS Release Guidance (Part C): As of August 11th, the Lake Okeechobee stage was within the Low Sub-band and Part C of the 2008 LORS suggests "Up to Maximum Practicable to the WCAs IF desirable or with minimum Everglades Impacts".

Consistent with the LORS release guidance, the USACE is requesting the SFWMD to make Lake Okeechobee regulatory releases to the WCAs. Drier conditions over the past week allowed for increased maximum practicable regulatory discharges from Lake O. Some of the water releases south were consumed by local water users and the rest treated by the STAs and passed through to the WCAs. Lake releases are being directed to STAs 1E, 1W, 2 and 3/4 on a 24/7 basis as conditions allow. This week the SFWMD continues to discharge additional Lake regulatory releases via S-352 and S-5A to STA-1W and/or STA-1E western flow-way, to be passed through WCA-1 to tide via S-39 and to WCA-2A via S-38 and the S-10's. Lake O regulatory releases via S-351 are also being made and are being sent through WCA-2A to WCA-3A after treatment in STA-2. S-38 and S-143 are also being used to discharge excess WCA-2A water to tide.

SFWMD Everglades' scientists report northwestern WCA-3A water levels are above land surface, but this area can receive Lake Okeechobee regulatory releases without adverse impacts. For other parts of the WCA system, ascension rates are high this week and in some areas above the 0.25 feet per week stage increase limit needed to

protect apple snail egg clusters from drowning. While rainfall may cause rapid ascensions, moderate ascension rates (in the range of 0.07 to 0.15 feet per week) are preferred for ecosystem needs in the wet season.

2008 LORS Release Guidance (Part D): The outcome from Part D of the 2008 LORS release guidance is: "S-79 up to 3,000 cfs; and S-80 up to 1,170 cfs". The lake stage is near the bottom of the middle third of the Low Sub-band. Consistent with the 2007 SEIS analysis of the selected plan and the 2008 Water Control Plan language on page 7-15, releases should be limited to 2,500 cfs at S-79 and 950 cfs at S-80. However since the Lake stage ascension rate has slowed due to increased discharges to the WCAs, the current up-to limits might be adequate (2,000 cfs at S-79 and 730 cfs at S-80). Note that SFWMD Lake O field staff and scientists are encouraging slowing the rate of ascension if possible; this will potentially benefit native apple snail reproduction.

For the St. Lucie Estuary, SFWMD estuary scientists suggest that mean monthly fresh water inflows exceeding 2000 cfs (from all sources including flows from S-80, S-49, S-97, Ten Mile Creek and the tidal basin) will result in harmful salinity conditions for oyster populations near the US1 Bridge. Mean monthly flows exceeding 3000 cfs from all sources will cause damage to seagrasses in the vicinity of the St. Lucie Inlet. Current inflows from local sources averaged 2355 cfs over the past week and 2043 over the past month. There is no ecological benefit associated with additional inflows from Lake Okeechobee.

For the Caloosahatchee Estuary, SFWMD estuary scientists suggest that mean monthly flows measured at S-79 that exceed 1500 cfs will result in harmful salinity conditions for oysters living in the vicinity of the Cape Coral Bridge. At mean monthly flows exceeding 2800 cfs, salinity in Iona Cove will become low enough to cause mortality of shoal grass. At slightly higher flows (3000 cfs) oysters in this area will be impacted by low salinity. Mean monthly flows of 4500 cfs will adversely impact seagrasses in San Carlos Bay. Flow at S-79 averaged 3097 cfs over the past week and 2323 cfs over the past month. There is no ecological benefit associated with additional inflows from Lake Okeechobee.

Weather and Climate

Rainfall during the past week totaled 1.48 inches district wide (through 7 a.m. August 12th). Lake Okeechobee received 1.56 inches of rain during the past 7-days. District-wide rainfall during the past 30 days totaled 8.21 inches (116% of average). During the past week rainfall recorded for the Upper and Lower Kissimmee Basins was 2.27 and 2.45 inches, respectively. For the past 30 days the Upper Basin received about 101% of average rainfall, while the lower basin received about 128% of average rainfall.

The SFWMD weather forecast for the upcoming week is below average to average rainfall. For week two, the forecast is more uncertain and is also for average rainfall. The available (31-July) Climate Prediction Center (CPC) outlook for August indicates equal chances of below-normal, normal and above-normal rainfall for central and southern Florida. The available (17-July) CPC outlook for all the three-month windows through November indicate equal chances of below-normal, normal and above-normal rainfall for central and southern Florida. Longer-range CPC climate outlooks for the winter of the 2014-15 indicate increased chances of above-normal rainfall associated with the forecast for an El Nino event.

Current Conditions and Operations

The August 11, 2014 Lake Okeechobee stage (reported by the USACE on August 12th) was 14.30 feet NGVD, 0.23 feet higher than last week. The Lake stage is about 1.08 feet higher than a month ago and is about 1.73 feet lower than one year ago. The August 11th stage was about 0.38 above the historical average for this date and rising within the Low Sub-band.

Daily release rates at the Lake structures, averaged for the week ending Aug 12th, were estimated at about 0 cfs at S-77 and 0 cfs at S-308. At the tidal structures, average daily discharges were about 3,097 cfs at S-79 and 284 cfs at S-80. The discharges at S-79 were mostly from local basin runoff produced from recent rainfall. All of the discharges at S-80 were from C-44 basin runoff. Average rates during the past 7-days may differ from the target because this 7-day averaging period differs from the implementation period. The current S-79 10-day target release of 1,500 cfs per the 2008 LORS will end on August 18th.

The WCA-1 stage is 0.01 feet above the bottom of the A-1 regulation zone (highest zone) and is relatively stable. WCA-2A stage continues to increase and is about 0.8 feet above its regulation schedule. The WCA-3A regulation stage (3 gage average) is now within Zone D, 0.17 feet below Zone A and is rapidly increasing.

Regulatory releases from WCA-1 to tide via the S-10s and S-39 are being made as conditions have allowed for Lake O releases to be made south of the Lake. Discharges from WCA-2A via the S-11s and S-38 continue to be made as the stage is above schedule. Regulatory releases from WCA-3A are being increased as the stage is now in Zone D and rapidly rising towards Zone A. In addition to the already opened S-12C and D, S-12A and B were recently opened to increase the total discharges made from the S-12s; S-333 is closed at this time as G-3273 is currently above the 6.8 feet NGVD threshold. Everglades ecologists recommend gradual discharge rate changes to protect ecosystems and downstream habitat.

SFWMD Lake Okeechobee Adaptive Protocol (AP) Release Guidance

This week the SFWMD is not applying the Lake Okeechobee Adaptive Protocol (AP) release guidance flowchart since the Lake Okeechobee stage is above the Base-flow Sub-band of the 2008 LORS.

Lake Okeechobee Adaptive Protocols (AP) Background Information

The AP document included recommendations to conserve water in the beginning of the dry season when the Lake stage is in the Low Sub-band to ensure availability for later in the dry season when all water demands tend to be at their highest. Specific language on page 12 is shown here for convenience: “One of the fundamental tenets of adaptive protocols for Lake Okeechobee operations is to limit the 2008 LORS Low sub-band maximum release rate during the early part of the dry season to help conserve water and increase its potential availability for later in the dry season when the demand is largest. To implement this precept, when the lake stage is within the Low sub-band in the early part of the dry season, the weekly operations guidance may recommend to the USACE to limit the release volumes to no more than 50 percent of the maximum allowable. Factors that may influence this recommendation include lake stage trend, and weather and water condition forecasts.”

The AP release guidance flowchart was designed primarily to guide release recommendations for circumstances when the Lake stage is within the Base-flow Sub-band or lower. The USACE’s Water Control Plan (WCP) for Lake Okeechobee and the EAA recognizes that the SFWMD may allocate water to the environment through its “Adaptive Protocols” or other SFWMD authorities. The WCP provides guidance as to releases, including Adaptive Protocol recommendations, in the various Lake schedule sub-bands.

There are two primary branches of the AP release guidance flowchart. The upper branch pertains to the 2008 LORS base-flow (aka, regulatory) releases while the lower branch pertains to environmental water supply releases. It is important to recognize that the AP was developed primarily to guide the water supply balance between Caloosahatchee Estuary, permitted water users, other water supply purposes of the water control system, and the Lake O MFL Rule. The water supply balance achieved by following the AP release guidance was evaluated by the Water Resources Advisory Commission and the SFWMD Governing Board, leading to board acceptance in September, 2010. Final Adaptive Protocols for Lake Okeechobee Operations (September 16, 2010).

For additional information pertaining to operations history and past recommendations, refer to the archives of LORS-2008 Release Guidance outcomes and operational position statements at www.sfwmd.gov under the Operational Planning topic.